THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 48

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte HIROSHI HASEGAWA and KAZUNORI TOCHIYAMA

_____

Appeal No. 95-4206
Application No. 07/803,465[1]

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HEARD: October 14, 1998

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Before HAIRSTON, KRASS, and MARTIN, Administrative Patent Judges.

KRASS, Administrative Patent Judge.

DECISION ON APPEAL

[1] Application for patent filed December 6, 1991.

This is a decision on appeal from the final rejection of claims 1 through 24, 26 through 37 and 39 through 48, all of the claims remaining in the application.

The invention is directed to a memory storage disk module with a shield. Representative independent claim 1 is reproduced as follows:

1. A memory storage disk module comprising:

a memory storage disk unit including at least one memory storage disk, and at least one head able to access the disk for writing and reading data to and from the disk;

a control circuit board attached to the memory storage disk unit and including a control circuit for controlling the disk and the head; and

a cover covering at least said memory storage disk unit and said control circuit board and having means for shielding electromagnetic waves emitted from at least said control circuit board, said cover having a longitudinal axis, a main panel portion extending generally along and around the longitudinal axis and having opposite ends, a front panel portion located on the main panel portion at one end thereof, and a rear panel portion located on the main panel portion at the other end thereof, the main panel portion being substantially solid and the front and rear panel portions having small apertures, respectively, allowing air to flow therethrough while shielding electromagnetic waves emitted from at least said control circuit board.

The examiner relies on the following references:

Dodson	4,702,154	Oct. 27, 1987
Varaiya et al. (Varaiya)	4,754,397	Jun. 28, 1988
Sarraf	4,926,291	May 15, 1990
Takahashi et al. (Takahashi)	5,173,819	Dec. 22, 1992

(effective filing date Oct. 2, 1989)

Claims 1 through 24, 26 through 37 and 39 through 47 stand rejected under 35 U.S.C. 103. As evidence of obviousness, the examiner cites Sarraf with regard to claims 1 through 24, 26 through 33, 36, 37 and 39 through 47, adding Varaiya with regard to claims 34 and 35. In the new grounds of rejection entered in the principal answer, the examiner now holds claims 1 through 4, 11 through 19, 29 through 36 and 40 through 48 rejected under 35 U.S.C. 112, first and second paragraphs, as being directed to a nonenabling disclosure and as being indefinite. Claims 5 through 7 and 10 also stand rejected under 35 U.S.C. 102(e) as anticipated by Takahashi. Moreover, claims 1 through 24, 26 through 33, 36, 37 and 39 through 47 stand rejected under 35 U.S.C. 103 as unpatentable over Sarraf in view of Dodson and claims 34 and 35 stand

rejected under 35 U.S.C. 103 as unpatentable over Sarraf in view of Dodson and Varaiya.

Rather than reiterate the arguments of appellants and the examiner, reference is made to the many briefs and answers for the respective details thereof.

OPINION

We turn first to the rejection of claims 1 through 4, 11 through 19, 29 through 36 and 40 through 48 under 35 U.S.C. 112, first and second paragraphs.

With regard to the first and second paragraphs of 35 U.S.C. 112, the examiner points to lines 18-20 of claim 1, lines 21-23 of claim 11, lines 18-20 of claim 29, lines 20-22 of claim 34, lines 18-20 of claim 36 and lines 21-23 of claim 40 and states that it is unclear as to how small the apertures must be in order to allow for the front and rear panel portions to continue to shield electromagnetic waves. The examiner concludes that the disclosure is not enabling since the disclosure fails to provide the dimension of the apertures necessary to perform the function of shielding electromagnetic waves.

We will not sustain either of the rejections under 35 U.S.C. 112. As to the second paragraph, we find nothing indefinite about the claims. The claims merely call for the front and rear panel portions to have “small apertures” which allow “air to flow therethrough while shielding electromagnetic waves.” There is nothing unclear about the recitation. The holes must not be so small as to inhibit all air flow but they must be small enough to shield against electromagnetic waves leaking through the holes to the outside of the cabinet. Thus we will not sustain the rejection based on the second paragraph of 35 U.S.C. 112.

With regard to the first paragraph of 35 U.S.C. 112, the question to be answered is whether the artisan skilled in this particular art would have been taught how to make and use the claimed invention without resorting to undue experimentation. We find that the disclosure is enabling. While some experimentation by artisans may be necessary in order to practice the invention, we find that such experimentation would not be undue. It appears to us that once given the requirements that the apertures must be large enough to permit air flow but small enough to shield electromagnetic waves, the

artisan would have no problem constructing the front and rear panel portions with such apertures, knowing the frequency or wavelength of the particular electromagnetic waves which are to be shielded. Our view is buttressed by the Tochiyama declaration (Paper No. 27), which describes how the artisan would measure the amount of electromagnetic emissions emitted from a device and, knowing the relationship between frequency and wavelength of electromagnetic waves, the artisan would have routinely determined the size of the apertures necessary to shield electromagnetic waves of a given frequency.

We find that the examiner does not have a reasonable basis on which to challenge the sufficiency of the instant disclosure and, as such, we will not sustain the rejection of claims 1 through 4, 11 through 19, 29 through 36 and 40 through 48 under 35 U.S.C. 112, first paragraph.

We turn now to the rejection of claims 5 through 7 and 10 under 35 U.S.C. 102(e) as anticipated by Takahashi. We will not sustain this rejection as Takahashi fails to teach all of the claim limitations.

In particular, claim 5 requires a top cover “which forms a passage of cooling air and directs air flow through a *gap*

between the control circuit board and the memory storage disk unit...” [emphasis ours]. Referring to Figures 5 and 6 of Takahashi, the examiner appears to take the position that circuit board 321 may be considered a “top cover” which forms an air passage [the passage being between circuit boards 321 and 322]. Since this “top cover” creates an air flow passage between boards 321 and 322 and this air passage is between control circuit board 322 and memory storage disk unit 13 in Takahashi, the examiner apparently considers the air flow passage to be a “gap” between the control circuit board and the memory storage disk unit. It is our view that such an interpretation is not well founded. Claim 5 clearly requires a “gap” between the control circuit board and the memory storage disk unit. It is not reasonable to consider that there is such a “gap” in Takahashi when Takahashi has a physical separation, a barrier, between the channel housing the control circuit board (on the right in Figure 5 of Takahashi) and the channel housing the memory storage disk unit, 13.

Since Takahashi fails to disclose the claimed ”gap,” Takahashi cannot be said to anticipate the subject matter of

instant claim 5. The examiner may wish to consider whether flange 74 in Sarraf might function as a "top cover," as per claim 5.

We turn, finally, to the rejections under 35 U.S.C. 103.

We will reverse the rejection of claims 1 through 24, 26 through 33, 36, 37, and 39 through 47 under 35 U.S.C. 103 based on Sarraf, alone, and the rejection of claims 34 and 35 under 35 U.S.C. 103 based only on Sarraf and Varaiya. The examiner's rationale in these rejections is bottomed on "official notice" that it is old and well known to provide apertures in the front and back of a fan cooled housing as it is to provide a plurality of fans in order to increase the amount of cooling. Since these "findings" by the examiner are reasonably challenged by appellants and the examiner has provided no evidence, in these rejections, of that which is contended to have been "well known," we find that the examiner has not presented a prima facie case of obviousness with regard to the claimed subject matter.

With regard to the rejection of the claims under 35 U.S.C. 103, based on Sarraf or Sarraf and Varaiya, wherein Dodson is included in order to provide evidence of that which

the examiner alleges to have been old and well known, we reach varied results.

First, regarding independent claim 1, the claim sets forth certain requirements for the claimed cover, including that the front and rear panel portions have “small apertures” and that air is allowed to flow “therethrough while shielding electromagnetic waves emitted from at least said control circuit board.” It is appellants’ position that Sarraf fails to disclose such apertures in the front portion and that, even applying Dodson, there is no teaching or suggestion in either of the references for providing the claimed cover with apertures which act to allow air cooling and to shield electromagnetic waves.

It is our view that Dodson clearly teaches the desirability of providing apertures in the front and rear portions of the cover of an analogous device for cooling purposes. See Figures 1 and 2 of Dodson where slots 32 are on the front of the housing while the arrows near reference numerals 20 and 20' indicate an air flow from the rear. Accordingly, when taken together with Sarraf’s disclosure of a need for apertures for cooling (see fan housing grill 40 in

Figure 2 thereof and louvres 65 in Figure 3), we find that it would have been obvious to artisans to have provided for apertures in various sections of the housing including front and rear portions.

With regard to the shielding of electromagnetic waves, Sarraf clearly teaches the desire to provide such shielding (see column 3, lines 30-32 and column 5, lines 39-41). While appellants contend that column 5 of Sarraf provides for shielding by element 20 which is not part of the cover, it is clear to us, from column 3 of Sarraf, that Sarraf intended for an alternative embodiment wherein a shield is provided in the interior of the enclosure cover. Thus, since the cover 30, 10, shown in Figure 1 of Sarraf is, or may be, an electromagnetic shield and the figure teaches apertures in the rear portion of the cover, and the provision of apertures in the front portion would have been obvious in view of Dodson, the combination of Sarraf and Dodson would appear to make the subject matter of claim 1 obvious, within the meaning of 35 U.S.C. 103.

We understand that the instant invention provides for the cooling effect of the apertures and for electromagnetic

shielding in the cover and that these functions are inseparable, the apertures being chosen small enough for shielding purposes (based on the frequency of the waves being shielded) while not being so small so as to block sufficient air flow. Sarraf may be silent as to the function of the apertures therein regarding electromagnetic shielding but it is inherent that the apertures in Sarraf will also shield electromagnetic waves to some extent and the instant claim 1, as well as other claims, is broad enough to read on such apertures since no specific frequency or wavelength of electromagnetic waves is required by the claims. Thus, while the rather tall and narrow apertures shown in Figure 1 of Sarraf may not shield all of the electromagnetic waves emitted from the control circuit board of Sarraf, the apertures would clearly shield those electromagnetic waves whose frequency make them unable to penetrate the apertures. Alternatively, the broad language of the claim would appear to permit the solid areas of the front and rear panel portions of the cover to shield the electromagnetic waves while the apertured areas permit air flow.

We have considered appellants' "means-plus-function" argument but we do not find it persuasive because, in accordance with 35 U.S.C. 112, sixth paragraph, the apertures in the cover of Sarraf would appear to be of similar structure and performing the same dual functions of permitting cooling and shielding electromagnetic radiation. Appellants do not contend that the elongated apertures shown by the references are not equivalent to the round apertures shown in appellants' disclosure.

With regard to claims 5 through 10, we will not sustain the rejection of these claims under 35 U.S.C. 103 because, similar to our reasoning supra with regard to the rejection under 35 U.S.C. 102(e), we fail to find any suggestion of the claimed "gap" in the applied references.

With regard to independent claim 11, this claim calls for first and second cooling fans, the first being "attached" to the memory storage disk unit and the second being "attached" to the power supply unit. We will also sustain the rejection of this claim under 35 U.S.C. 103 as we agree with the examiner that Dodson's teaching of using two cooling fans, albeit side by side, would have suggested to the artisan that

two cooling fans would be desirable over the use of only one fan. Also, since Dodson's Figure 2 shows a fan attached to the power unit and Figures 1-3 of Sarraf show the desirability of employing a cooling fan to cool both the power supply unit 14, and the memory storage disk unit 22, the artisan would clearly have been led to employ two cooling fans, one "attached" to the power supply unit and one "attached" to the memory storage disk unit.

However, when we reach instant claim 20, and its dependent claims, wherein the cooling fan is recited as being arranged in a particular manner in order to induce air flow in a particular way, so that the memory disk storage unit, the control circuit board and the power supply unit are all cooled by the cooling fan, we find nothing in the applied references which would have suggested this particular arrangement nor do we find any convincing rationale of obviousness forthcoming from the examiner in this regard.

Concerning independent claim 29, this claim adds the limitation that connector means are arranged on or near the rear panel portion so as to be connectable to various units. It is our view that that is just what is shown in Figure 2 of

Sarraf wherein receptacles 86 are depicted for various connections with other units.

Thus, we will also sustain the rejection of claim 29 and its dependent claims under 35 U.S.C. 103.

With regard to claims 34 and 35 which recite a “rack” for mounting the memory storage disk modules, the examiner relies on the teaching of Varaiya for the suggestion of such a rack. Since we find no substantive argument by appellants with regard to this limitation, we will accept the examiner’s position and sustain the rejection of claims 34 and 35 under 35 U.S.C. 103.

With regard to independent claim 37, this is merely a counterpart method claim to previous apparatus claims. We find nothing therein which would have been unobvious over the manner of constructing the device of Sarraf as modified by the teachings of Dodson.

Independent claim 40 includes limitations which have all been discussed supra regarding the first and second cooling fans and the apertures in the front and rear portions of the cover and we will sustain the rejection of claim 40, and its dependent claims, for similar reasons.

CONCLUSION

We have not sustained the rejection of claims 1 through 4, 11 through 19, 29 through 36 and 40 through 48 under 35 U.S.C. 112, first or second paragraphs nor have we sustained the rejection of claims 5 through 7 and 10 under 35 U.S.C. 102(e). We also have not sustained the rejections of claims 1 through 24, 26 through 37 and 39 through 47 under 35 U.S.C. 103 based on either Sarraf or Sarraf and Varaiya. We have, however, sustained the rejection of claims 1 through 4, 11 through 19, 29 through 37 and 39 through 47 under 35 U.S.C. 103 based on either Sarraf in view of Dodson or Sarraf and Varaiya in view of Dodson. We have not, however, sustained the rejection of claims 5 through 10, 20 through 24 and 26 through 28 under 35 U.S.C. 103 even where Dodson was employed against the claims.

Accordingly, the examiner’s decision is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

KENNETH W. HAIRSTON Administrative Patent Judge	)
ERROL A. KRASS Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
JOHN C. MARTIN Administrative Patent Judge	)

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